

UNIVERSITY OF MAURITIUS

3D Printing: Beginner's Guide to Filament & Resin-Based Additive Manufacturing Technologies



1. INTRODUCTION

This is a beginner's course on Additive Manufacturing Technologies (3D-Printing), namely using Fused Deposition Modelling (FDM) and Stereolithography (SLA) techniques. 3D-Printing skills allow designers, creators and hobbyists to seamlessly create 3D-objects from 3D-CAD models. 3D-Printing is an automated and layer-by-layer model creation technique which has streamlined manufacturing operations thereby enabling rapid prototyping and realization of complex shapes

The aim of this short course is to enable participants to master the basic skills of additive manufacturing technology using filament and resin-based 3D-Printer.

2. OBJECTIVES

At the end of the course, participants are expected to be able to:

- To acquire fundamental notion on 3D-Printing Technologies
- To explore online databases for existing designs for 3D-Printing
- To master the manipulation of Slicer software such as Ultimaker Cura Slicer and Bambu Studio which are essential in pre-processing stages
- To fine tune settings on Slicer Software for improved 3D-prints
- To acquire the skills for manipulating and printing of 3D models in 3D Printer
- To troubleshoot common issues encountered during filament-based additive manufacturing operations.

2. DURATION

The duration of the course is eighteen (18) hours, conducted on three consecutive days:

- 02 December 2026
- 03 December 2026
- 04 December 2026

3. CURRICULUM

Session	Course Outline
1	Introduction to Additive Manufacturing (AM) - General Introduction to AM - Types of AM Processes - Materials Consideration in AM - Benefits & Limitations of AM

2	Pre-Process Description in AM - Overview of Stages in AM - Design Iteration - Trade-off in AM (Print-duration Vs Quality) - Sizing to Print - Refining Stage
3	Models for 3D-Printing - Online Databases for Existing Designs - CAD Software - Maker World Platform - Introduction to MakerLab - Advanced Features - Exporting File To Slicer
4	Introduction to Slicer Software - Overview of Ultimaker Cura Slicer & Bambu Studio - Profile Creation & Management - Print Layer Settings - Other Parameter Settings (Support, Infill, Speed) - 3D Model Manipulation - G-Code printing file format
5	Processing & Post-Processing in AM - Printer Setup - Printing Checklist - Filament Selection - Preheat Stage Settings - Bed Adjustment & Calibration
6	Techniques for Achieving High Quality Prints - Analysis of 3D Printed Object - Refining 3D Printed Object - Summary Guidelines for Improved 3D Prints - Troubleshooting 3D Printer

5. VENUE & FACILITIES

The short course will be held in CAD/CAM lab of the Faculty of Engineering, Sir Edouard Lim Fat Engineering Tower, University of Mauritius, Réduit.

6. TRAINING METHODOLOGY

Delivery of the course will be mainly in the form of lab-based practical sessions including brief lecture sessions.



7. CERTIFICATE

Participants who have successfully attended all sessions of this short course will be awarded a certificate of attendance issued by the University of Mauritius.

8. WHO SHOULD ATTEND

The short course is designed and customized principally for engineers, fresh graduates, University students & hobbyists.

Note: Limited Number of Seats

9. TRAINING/REGISTRATION FEES

Rs. 12,000 per participant

**Special
Discount -
University
Students**

10. RESOURCE PERSONS

Dr RAMFUL Raviduth, Senior Lecturer in the Mechanical & Production Engineering Department (University of Mauritius) will be the resource person for this short course.

11. STARTING DATE

Saturday 02 December 2026

Registration Deadline: 30 November 2026

12. MODE OF PAYMENT

Payment can be effected in Cash, Card, or Cheque. Cheque must be drawn to the order of the University of Mauritius.

Payment must be effected at UoM Cash Office, Finance Section by 30 November 2026.

Short Course APPLICATION FORM

3D Printing: Beginner's Guide to Filament & Resin-Based Additive Manufacturing Technologies

(MQA Approved)

Name of Participant:

Postal Address:

Tel: Fax:

Mobile Tel:

Email:

Organization:

Position:

Signature of Participant:

Date:

Application forms, duly filled, should be sent to the following address by latest 30 November 2026. Forms can also be sent by email to:

Dr RAMFUL Raviduth
Mechanical & Production Engineering Department
Faculty of Engineering
University of Mauritius, Réduit, 80837,
Republic of Mauritius

Tel: +230 403 7400 (Ext 7887) | Fax: +230 465 7144

Email: r.ramful@uom.ac.mu

The University of Mauritius reserves the right not to run the course should the number of participants be insufficient.

**MQA
Approved**



**3D-
PRINTING**